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# MC6500PRO V4 User Manual

## Small Multi-purpose 2 Axis aerial video Camera Gimbal

小型多用途兩軸航拍雲臺組裝說明書

非常重要：在組裝和使用 MC6500PRO V4.0 前請您仔細通讀本手册。

*IMPORTANT:* Please read through this manual in its entirety before attempting to assemble or use the camera gimbal.

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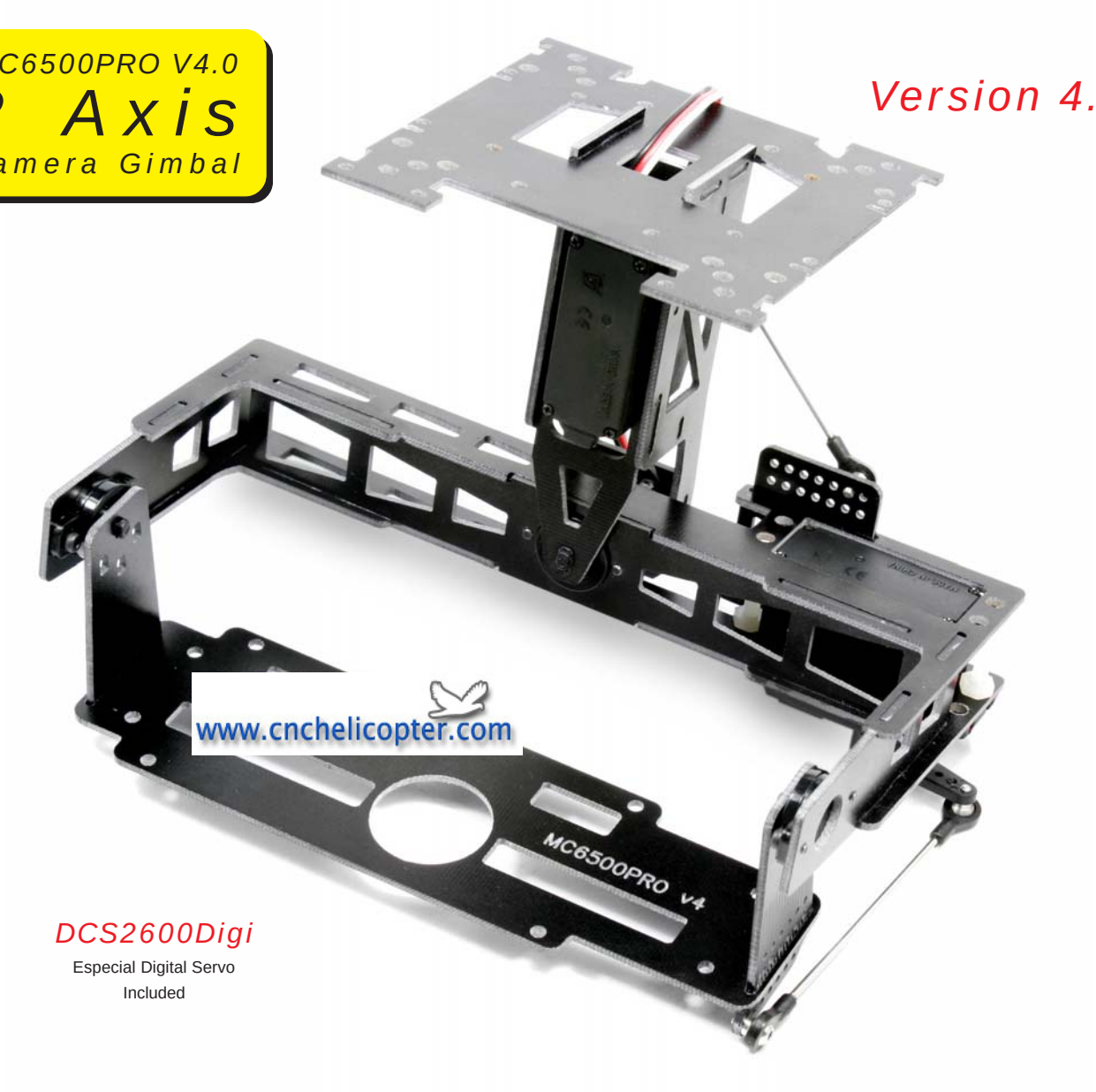
MC6500PRO V4.0

2 Axis

Camera Gimbal

Version 4.0




DCS2600Digi

Especial Digital Servo Included

MC6500PRO V4新特性

- 加强機架結構，有效載荷提升至800g。
- 雲臺寬度增加，完美支持各種微單相機。
- 完美支持GOPRO HD 鏡頭垂直安裝。
- 可吊裝，也可以倒裝。
- 依據相機不同，重心可在一定範圍內調節。
- 支持脚架擴展和力臂擴展，可升級成完整飛行器。

*MC6500PRO V2 new features:*

- Strengthen the frame structure, the effective load increases to 800g.
- Perfect support for an invert mode and GOPRO HD upright installation.
- Wider camera mount, the SONY NEX5 and orther Mircro DSLR Camera can be installed.
- Servo screws can easily be installed.
- Optimize the center of gravity of the camera gimbal.
- Arm and Landing Gear can be installed.

## STEP 1

## 安裝組尼器 | *Install the Dampers*

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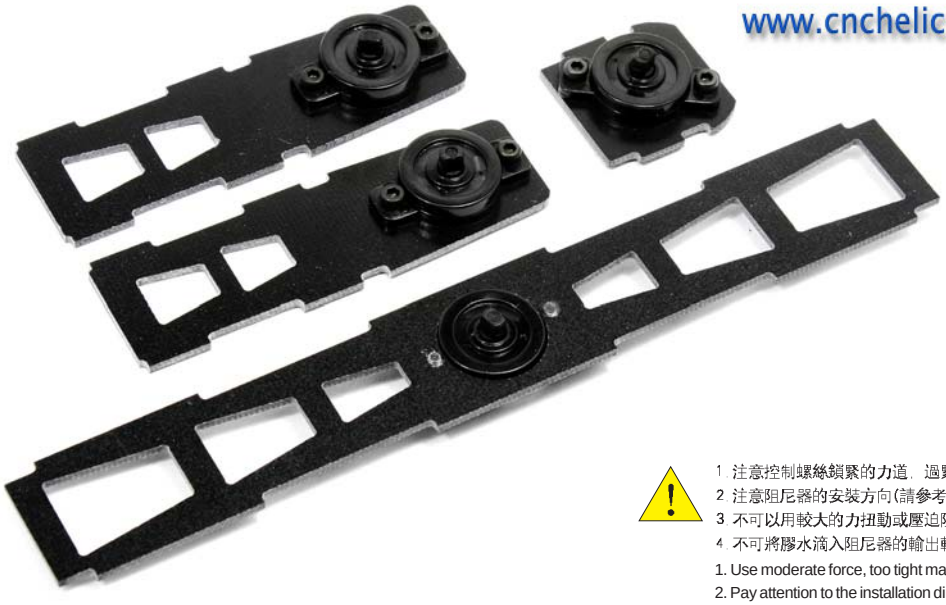

1. 注意控制螺絲鎖緊的力道，過緊易破損
2. 注意阻尼器的安裝方向(請參考上述照片)
3. 不可以用較大的力扭動或壓迫阻尼器的輸出軸，否則會造成損壞
4. 不可將膠水滴入阻尼器的輸出軸內，否則會造成損壞

1. Use moderate force, too tight may break the parts;
2. Pay attention to the installation direction of the damper as seen above;
3. Do not apply too much force when rotate or press the damper output shaft rough, it may break the parts
4. Do not drip the adhesive into the damper output shaft, it may break the parts

## STEP 2

## 安裝滾轉控制臂
## *Install the rolling control arms*

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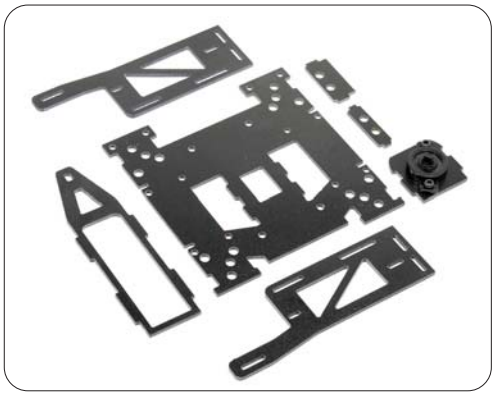
備好以上零件
Prepare the parts above

1. 注意零件的安裝方向
2. 把膠塗在接縫背面更利于外形美觀
3. 不要讓膠流到手指上了，以免在產品上留下指紋
4. 需等膠干透后才可放手，以免零件翘起，造成粘接不良

1. Pay attention to the installation direction of the parts;
2. Apply the adhesive on the back of the joints could keep the appearance;
3. Do not apply the adhesive on the fingers, to avoid leaving the finger prints on the parts
4. Do not loose your hand until the adhesive dry, to make sure that all the parts are adhered perfectly

## STEP 3

## 安裝滾轉驅動臂 | *Install the rolling actuating arm*



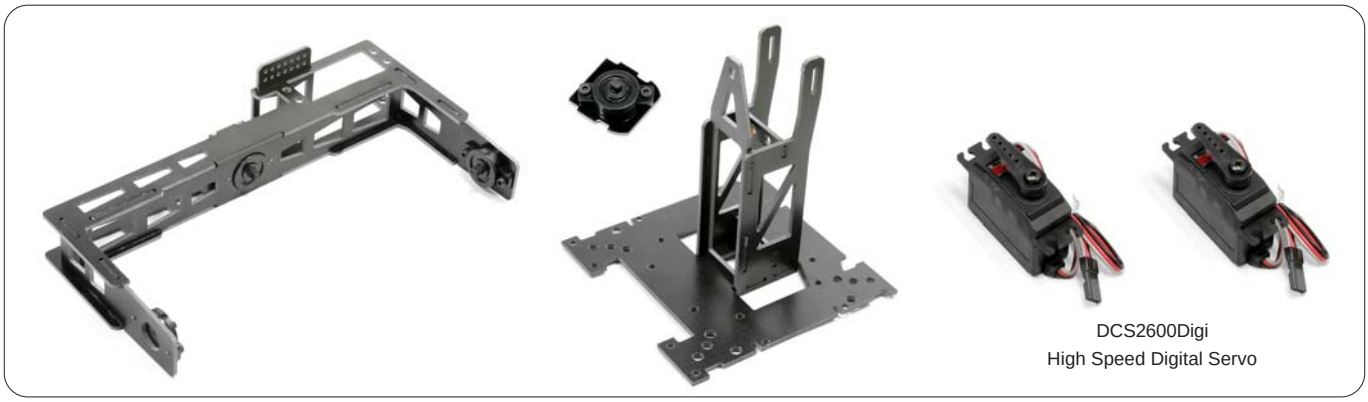
備好零件
Prepare the parts

照左圖進行組裝
交叉位置需全部打膠
Install the parts as seen on the left, using the instant adhesive at all crossed position

成品組裝完成
Assembled

## STEP 4

## 安裝舵機 | *Install the digital servo to camera gimbal*



DCS2600Digi
High Speed Digital Servo

備好以上零件
Prepare the parts above

MC6500PRO 雲臺所搭配的是兩只超精密雲臺專用數碼舵機——DCS2600Digi，采用了特別爲雲臺應用優化的控制程序，擁有卓越的運轉順滑度和精確的響應能力。它擁有 3.0kg/cm 的超大力矩，速度高達 0.06s/60，采用響應速度極高的空心杯馬達，內部采用 6 級齒輪減速機構。DCS2600Digi 這顆特制的雲臺專用舵機的性能非市場上普通鎖尾舵機所能比擬，專屬設計更加符合雲臺控制所需的性能！

MC6500PRO comes with 2 ultra-precision digital servos DCS2600Digi, which is specialized for camera mount control. The control program applied in this servo is optimized for the control of the camera mount, so the servo runs smoothly when working and reflects accurately at working. The moment of force of DSC2600Digi is 3.0kg/cm; the speed could reach 0.06s/60. At the meantime, it uses quick reaction coreless motor.
This performance of this specialized camera mount digital servo is superior to any other common tail servo in the market. The special design meets the requirements for the performance of the camera gimbal.

1. 在組裝前，先將舵機搖臂拆下(如右圖所示)
2. 使用兩顆尼龍螺絲固定舵機
3. 通電并完成角度確認后，方可安裝舵機搖臂
4. 每顆舵機只用兩顆尼龍螺絲固定，安裝方式采用上圖所示的對角綫安裝。

1. Before installation, please take the servo horns off (as seen on the right).
2. Fix the servo by 2 nylon screws.
3. Power on and confirm the angle, then install the servo horn of the servos.
4. Using 2 nylon screws to fix the servo. Install the servo as the picture above.

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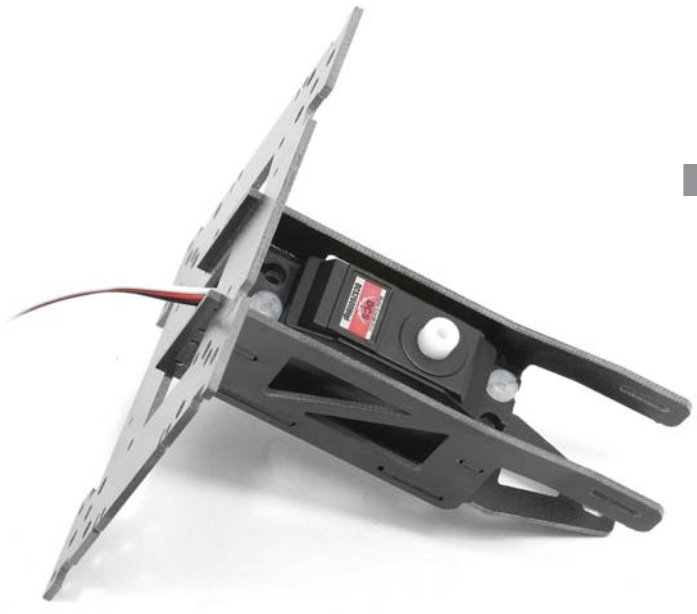
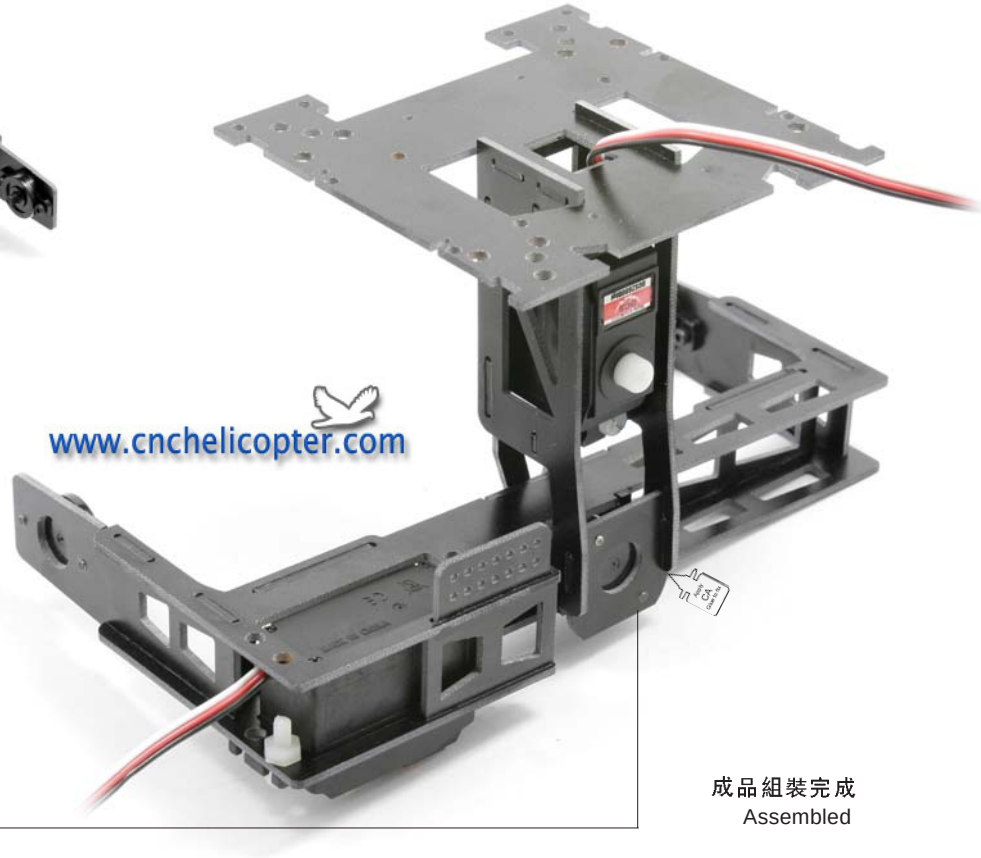
備好以上零件
Prepare the parts above



注意布綫
Note arrange the servo wire



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成品組裝完成
Assembled

## STEP 5 安裝攝影機固定平臺 | *Install the camera mount*

備好以上零件
Prepare the parts above

例子：安裝SONY NEX5
Example for install SONY NEX5

安裝不同鏡頭時，用于調節前后重心。
For adjust the C.G of the camera when use some lens.

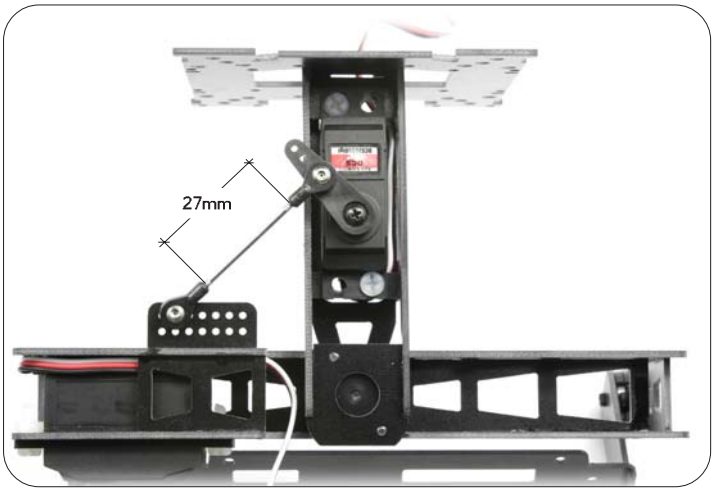
適合于重心較高的相機，如：Panasonc GH2, Olympus E-M5 等
For the High C.G. of camera, such as: Panasonc GH2,Olympus E-M5 etc.

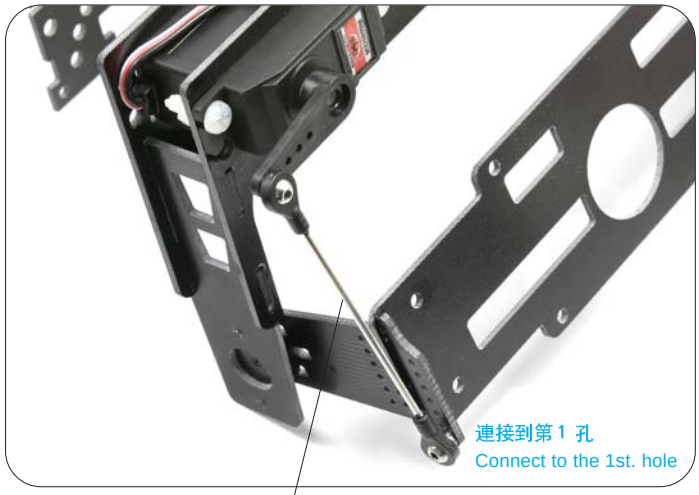
適合于絕大多數相機，如：GOPRO、SONY NEX5 等
For the vast majority of camera, such as: GOPRO, SONY NEX5 etc.

## STEP 6

# 安裝控制連杆 | *Install the control linkers*

必須在確定舵機中立點后再安裝搖臂，否則可能因超出舵機行程而損壞舵機！
Must confirm the neutral point of servo before install arms else the servo may damage.

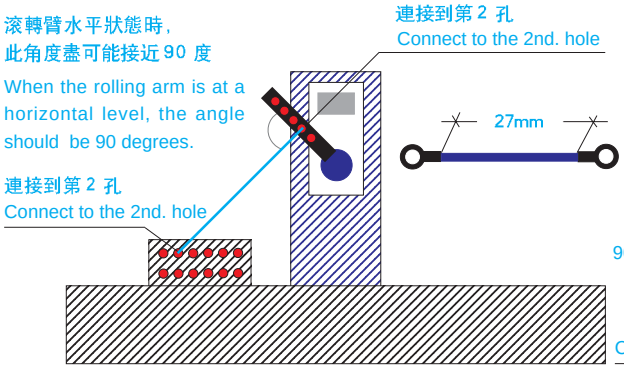


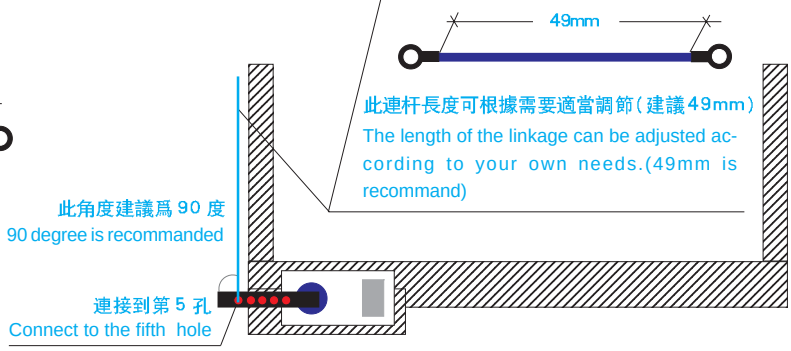



連接到第 1 孔
Connect to the 1st. hole

滾轉臂水平狀態時，
此角度盡可能接近 90 度
When the rolling arm is at a horizontal level, the angle should be 90 degrees.

連接到第 2 孔
Connect to the 2nd. hole





49mm
此連杆長度可根據需要適當調節（建議49mm）
The length of the linkage can be adjusted according to your own needs.(49mm is recommand)
此角度建議爲 90 度
90 degree is recommanded
連接到第 5 孔
Connect to the fifth hole

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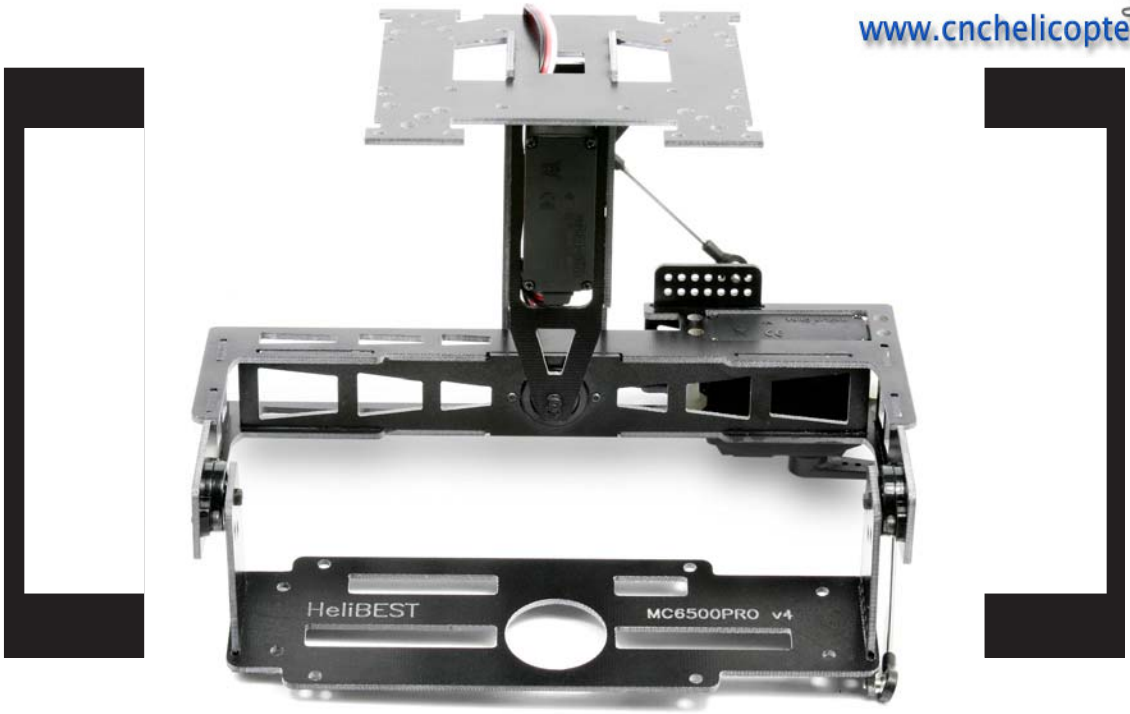
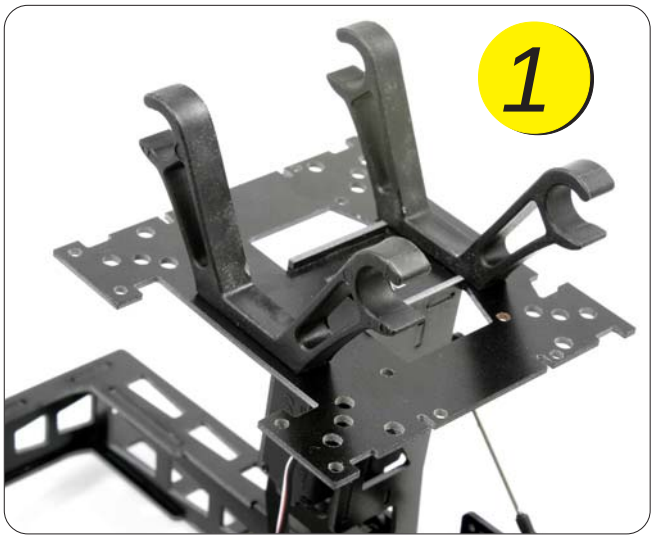
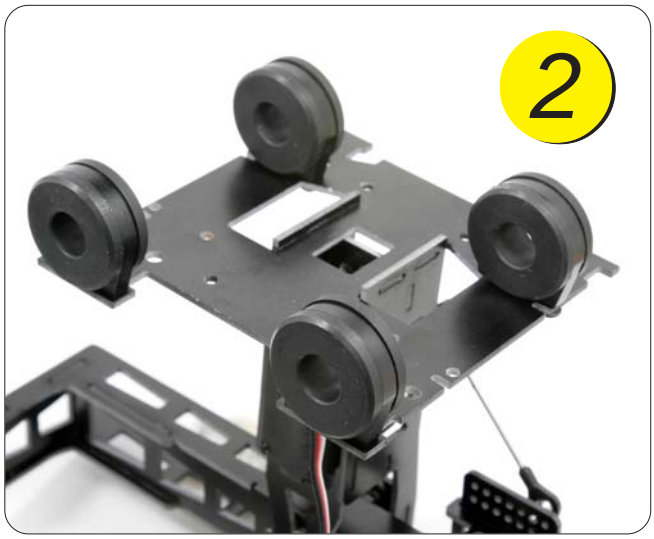



成品組裝完成
Assembled

## *Three ways to connect MC6500PRO V4 to X650 Value*
## 把 MC6500PRO V4 安装到 X650 Value 上的三種方法




Optional parts:
Item number: L3010 x 2
Item Number: M3011 x 1




Optional parts:
Item number: L3004 x 4
Item number: L3003 x 4
Item Number: M3011 x 1

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Damper pipe and O-ring come with MC6500PRO for free.

*Want to use invert mode? Please refer MC6500PRO V2.0 Manual.*

MC6500PRO V4 的倒置安裝方法請參考 V2.0 說明書

**Type-A** 吊裝

**標准安裝方式**：適合絕大多數帶有加高脚架的小型航模飛行器，如 X650V4／V8 等。拍攝角度爲前視角至俯拍最大 60 度左右範圍內的拍攝角度。

**Standerd installation form:** For the vast majority of small-scale model aircrafts with heightened landing gear, such as X650V4, X650V8, etc. The shooting angle is between the former perspective to maximum 60 degrees high angle shot.

**Type-B** 倒裝

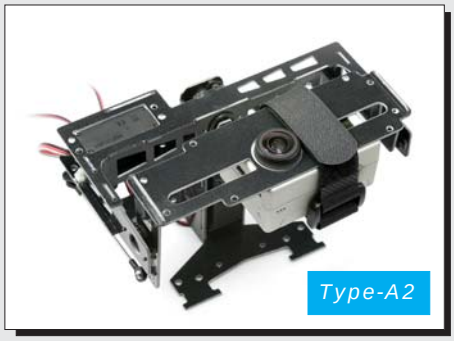
**標准安裝方式**：適合絕大多數不帶加高脚架的小型航模飛行器，如 X450Pro、F450 等。拍攝角度爲前視角至仰拍最大 60 度左右範圍內的拍攝角度。

**Standerd installation form:** For the vast majority of small-scale model aircrafts without heightened landing gear, such as X450Pro, F450, etc. The shooting angle is between the former perspective to maximum 60 degrees low angle shot.

**Type-A1**

**正投攝影方式**：將 GOPRO HD 的鏡頭以垂直 90 度的方式朝向地面進行拍攝。

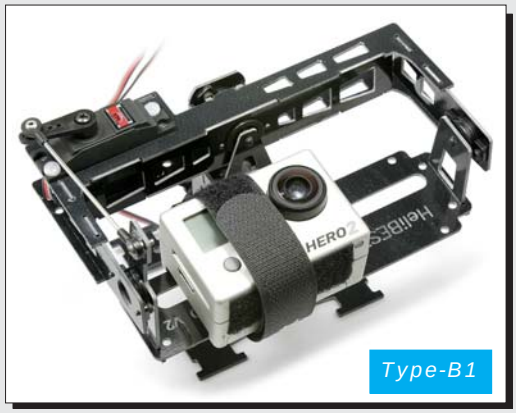
Vertical photography way: make the lens of GOPRO HD face the ground vertically.



**Type-A2**

**倒裝仰拍方式**：將 GOPRO HD 的鏡頭以垂直 90 度的方式朝向天空進行拍攝。選擇這種方式時，雲臺必須倒置安裝（類似于 Type-B）。

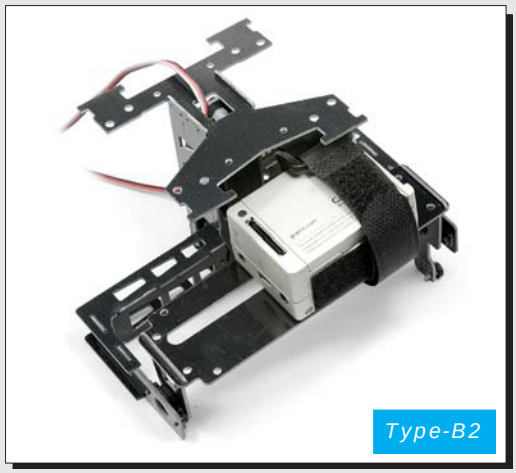
Inverted low angle shooting way: make the lens of GOPRO HD face the sky vertically.In this way,the camera gimbal should be installed invertedly.( similar to Type-B)



**Type-B1**

**倒投攝影方式**：將 GOPRO HD 的鏡頭以垂直 90 度的方式朝向天空進行拍攝。

Straight shooting way: make the lens of GOPRO HD face the sky vertically.



**Type-B2**

**吊裝俯拍方式**：將 GOPRO HD 的鏡頭以垂直 90 度的方式朝向地面進行拍攝。選擇這種方式時，雲臺必須吊裝裝（類似于 Type-A）。

Hoisting high angle shooting way: make the lens of GOPRO HD face the ground vertically.In this way,the camera gimbal should be hoisted.( similar to Type-A)

# Extend your MC6500PRO

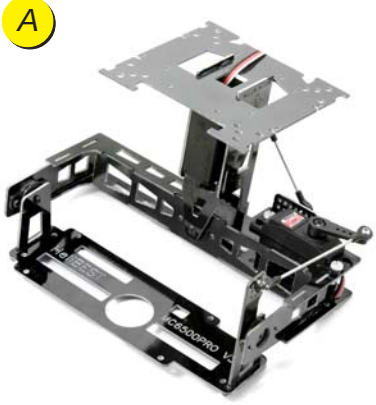
## 擴展你的 MC6500PRO

Use MC6500PRO-L(Optional parts) and MC6500PRO-A(Optional parts) let your MC6500PRO become MC400QUAD Aerial Aircraft.

通過加裝 MC6500PRO–L（選購件）和 MC6500PRO–A（選購件），
使你的 MC6500PRO 航拍雲臺變成 MC400QUAD 航拍飛行器。

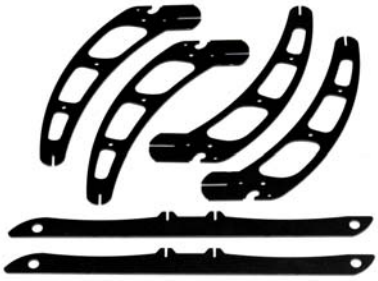
### 部品組成
### *Packing List*

A



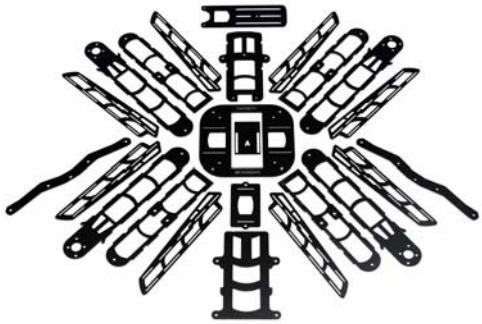
1x MC6500PRO Camera Gimbal
1x MC6500PRO航拍雲臺

B



1x MC6500PRO-L (Landing Gear)
1x MC6500PRO-L (脚架組件)

C



1x MC6500PRO-A (MC400QUAD Frame)
1x MC6500PRO-A (MC400QUAD機身組件)

*A+B=MC6500PRO V3L*

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for any flyer which no landing Gear

for 450EP R/C Helicopter

*A+B+C=MC400QUAD*

Complete picture of *MC400QUAD*

重要說明：

1.MC400QUAD 是由 MC6500PRO 雲臺（需 3.0 以上版本）和 MC6500PRO–L 以及 MC6500PRO–A 組件組合而成，缺一不可。

2. MC400QUAD 不包括除舵機以外的其它電子設備，要組成完整的飛行器您還需要另購：飛控、馬達、電調、遥控器、電池、充電器等設備。

3. 請您仔細閱讀本組裝説明書，以便順利安裝。

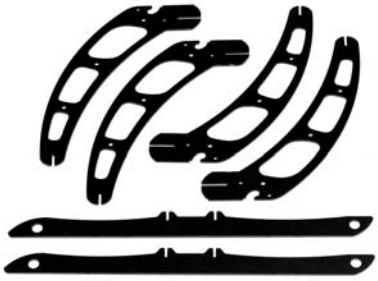
*Important:*

1. MC400QUAD is combined with MC6500PRO(3.0 version min) , MC6500PRO-L and MC6500PRO-A.

2. MC400QUAD does not include other electronic devices but two servos. if you want to assemble a complete aircraft, you need to purchaseother devices, such as:flight control, motor, ESC, radio, battery, charger, etc.

3. Please carefully read the assembly instructions for a smooth assembly.

## 組裝 MC6500PRO–L
## *Assemble the MC6500PRO-L*



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用于没有脚架的多軸飛行器
for any flyer which no landing Gear

用于各種 450 電動直升機
for 450EP R/C Helicopter

可直接卡緊安裝
Direct clamping installed

組裝前請調整好馬達安裝螺絲孔的方向
Before assembly, please adjust the direction of the Motor screw holes.

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4 條臂組裝完成
Complete assembly of the four-arms

注意螺絲孔位
Attention to the position of screw holes

M3 x 6 圓頭內六角螺絲與螺母
M3 x 6 Socket Screw and Nut

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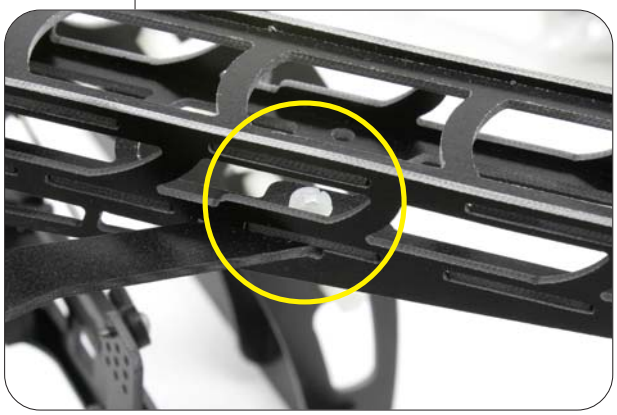
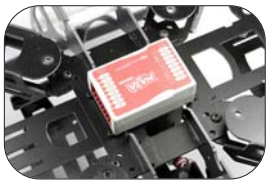
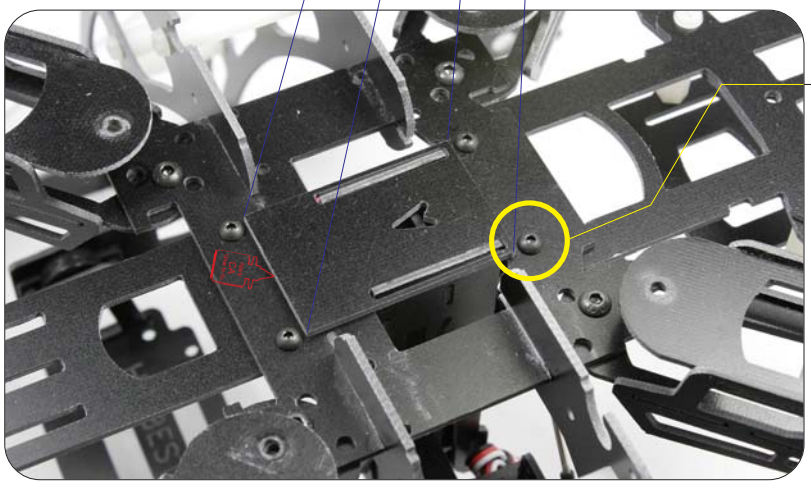


M3 x 10 尼龍螺絲和螺母
M3 x 10 Nylon Screw and Nut



將設備承載板用膠水粘貼在雲臺頂部
Glue the Mounting Plate to the top of the Gimbal.



M2.5 x 6 圓頭內六角螺絲與螺母
M2.5 x 6 Socket Screw and Nut

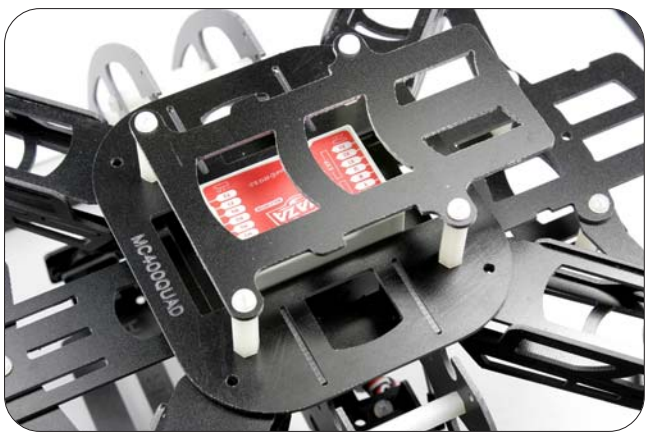
M3 x 20 尼龍支柱
M3 x 20 Nylon Pillar

M3 x 10 尼龍螺絲
M3 x 10 Nylon Screw

M3 x 10 尼龍螺絲
M3 x 10 Nylon Screw

預裝好頂板和電池固定板
Assemble the Top Plate and Battery Plate.

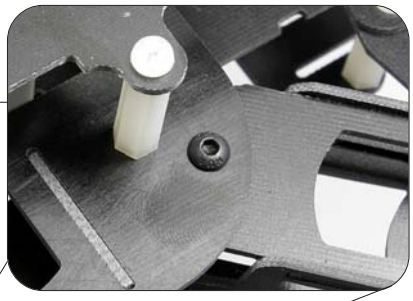
M3 x 20 尼龍支柱
M3 x 20 Nylon Pillar




例子 1：安裝 DJI NAZA 飛控
Example 1: Install the DJI NAZA F.C.

例子 2：安裝 DJI WK–M IMU 模塊
Example 2: Install the DJI WK-M IMU Module

M3 x 6 圓頭內六角螺絲與螺母
M3 x 6 Socket Screw and Nut



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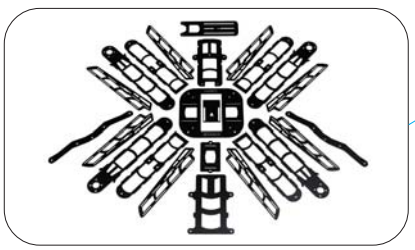
## 各組件的重量
## *The weight of MC400QUAD Parts*

MC6500PRO-L 63.5g

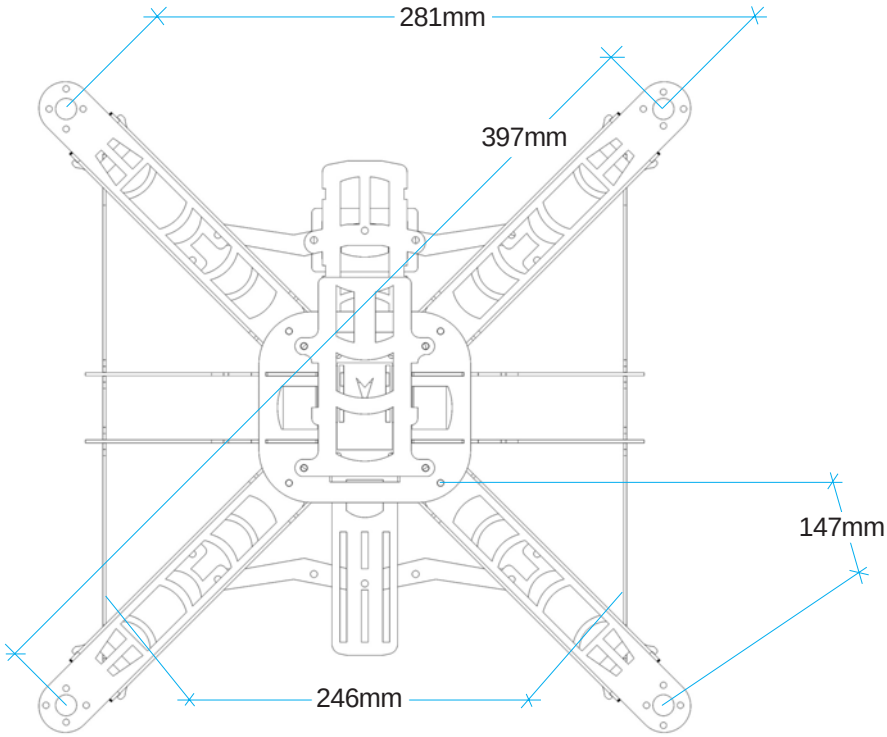


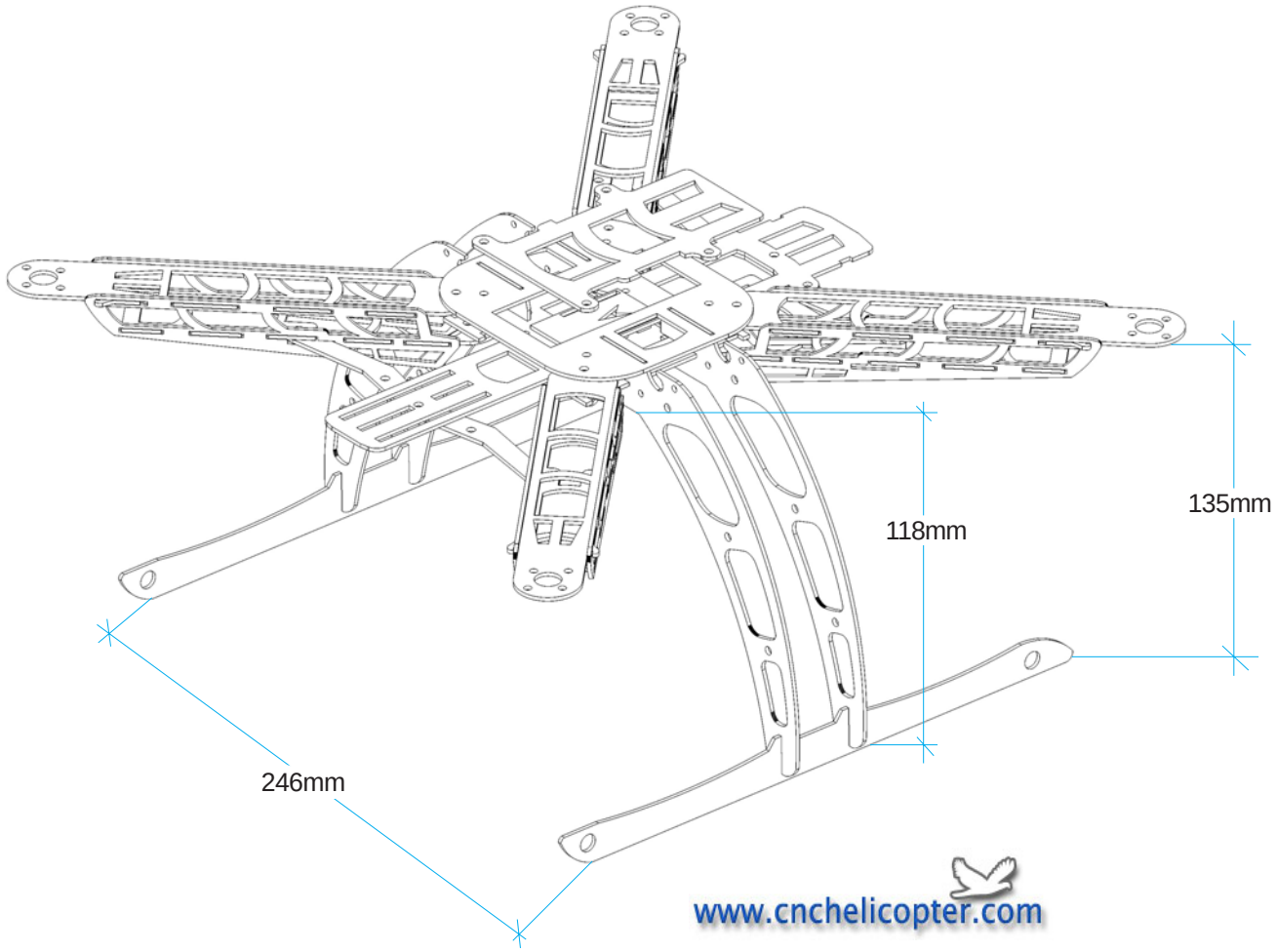
MC6500PRO-A 162g

MC6500PRO V3 115g

MC6500PRO-V3L 179g

MC400QUAD 346g


281mm
397mm
147mm
246mm


135mm
118mm
246mm
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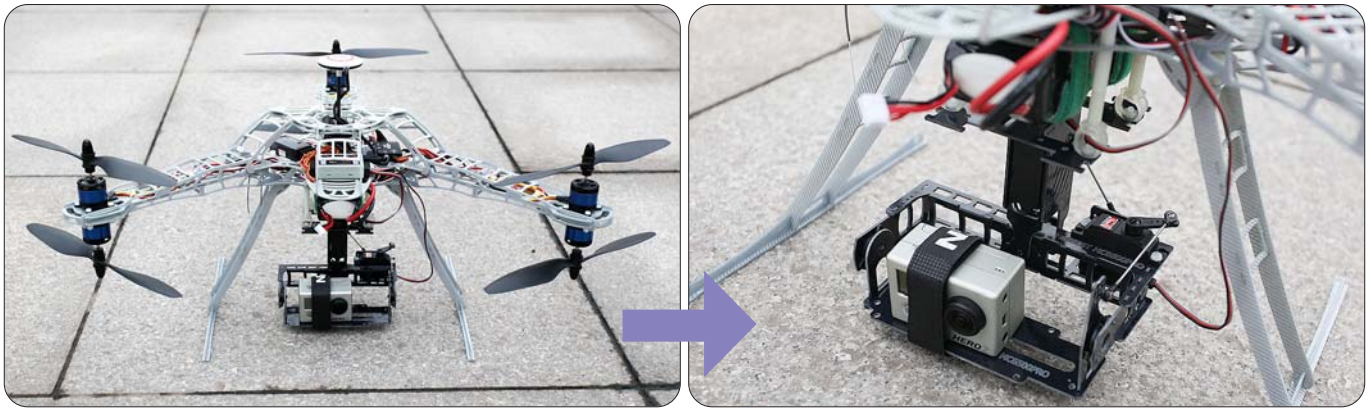
# 應用示範
# *Demonstration*

Install the MC6500PRO V2 on XAircraft X650V4

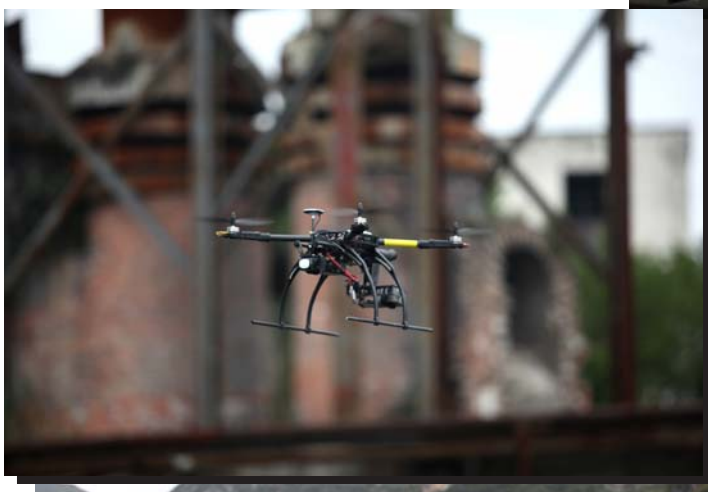


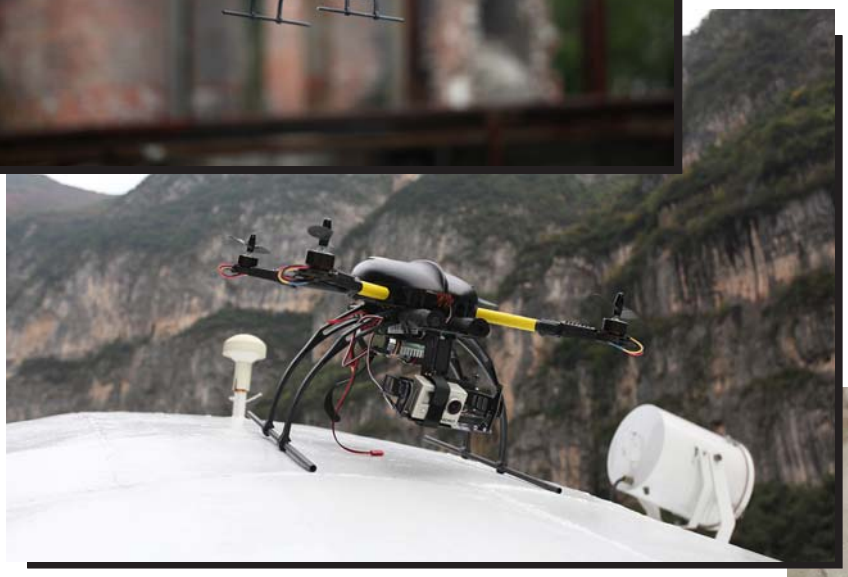
Install the MC6500PRO on SIGMA Y6-500FG

Install the MC6500PRO on XAircraft DIY-HEXA

Install the MC6500PRO V2 on DJI F450

Install the MC6500PRO V2 on SIGMA Y6-400W





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*MC6500PRO*

*Camera Gimbal*

Ideal for *Aerial Video*